AMENDMENTS TO THE CLAIMS

1. (Currently amended) A network reconfiguration method for reconfiguring a network including a plurality of sub-networks each including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, the network reconfiguration method comprising the steps of:

(i) causing each node to detect a linkable ~~node:~~ node;

(ii) generating detection information including a result of detection in the step (i);

(iii) with reference to the detection information generated in the step (ii), selecting a node ~~becoming~~ to become the node operating in the master mode~~, in such a manner~~ so as to reduce a total number of nodes operating in the master mode; and

(iv) constructing a sub-network including the node selected in the step (iii).

2. (Currently amended) The network reconfiguration method as defined in claim 1, wherein, the step (iii) includes the sub-steps of:

(a) searching for a node to which all nodes on the network are linkable;

(b) if the node to which all nodes on the network are linkable cannot be found ~~out~~ in ~~the~~ step (a), searching a combination of nodes to any one of which all nodes on the network are linkable; and a node which is linkable to at least two nodes in the combination of the nodes;

(c) if the node linkable to said at least two nodes cannot be found ~~out~~, increasing a number of nodes constituting the combination and repeating ~~the~~ step (b); and

(d) determining either the node found-out in-the step (a) or the combination of the nodes

found out in the step (b) as the node(s) operating in the master mode.

3. (Currently amended) The network reconfiguration method as defined in claim 1, wherein, the step (iv) includes a sub-step of causing a node to notify another node of a change of a link.

4. (Currently amended) A node which is eligible to be a part of a sub-network including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, and is capable of operating both in the master mode and in the slave mode, comprising:

detection means for detecting a linkable node;

storage means for storing detection information which includes a result of detection of the node, which is obtained by the detection means, and results of detections of other nodes constituting a network including sub-networks including said sub-network;

communication means for exchanging the detection information with an outside another node;

master selecting means for selecting, with by reference to the detection information, a node becoming the node operating in the master mode, in such a manner as to reduce a total number of nodes on the network operating in the master mode; and

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construction means for constructing a sub-network by selecting a mode of the node and selecting a target node to be linked with, ~~with~~ by reference to a selection by the master selecting means.

5. (Currently amended) The node as defined in claim 4, wherein, the master selecting means includes:

first searching means for searching a node to which all nodes on the network are linkable;

second searching means for, if the node to which all nodes on the network are linkable cannot be found ~~out~~ by the first searching means, searching a combination of nodes to any one of which all nodes on the network are linkable; and a node which is linkable to at least two nodes in the combination of the nodes;

repeating means for, if the node linkable to said at least two nodes cannot be found ~~out~~ by the second searching means, increasing a number of nodes constituting the combination and repeating an operation carried out by the second searching means; and

determining means for determining either the node found ~~out~~ by the first searching means or the combination of the nodes found ~~out~~ by the second searching means as the node(s) operating in the master mode.

6. (Currently amended) The node as defined in claim 4, wherein, the construction means includes notification means for notifying ~~an outside~~ another node of an execution of a switching to establish a link with the selected target node.

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7. (Currently amended) A link change method for changing a link of a node which is eligible to be a part of a sub-network including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, and is capable of operating both in the master mode and in the slave mode, the link change method comprising the steps of:

(i) detecting a linkable node;

(ii) receiving, from~~an outside~~ other nodes, detection information including results of detections of other nodes constituting a network including sub-networks including said sub-network;

(iii) updating the received detection information with reference to a result of detection of the node, which is obtained in the step (i);

(iv)~~to the outside,~~ sending the detection information updated in the step (iii) to other nodes;

(v) with reference to the detection information updated in the step (iii), selecting a node becoming the node operating in the master mode, in such a manner as to reduce a total number of nodes operating in the master mode;

(vi) based on a selection in the step (v), selecting a mode of the node and selecting a target node to be linked with; and

(vii) if the target node selected in the step (vi) is different from a current target node, switching the target node.

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8. (Currently amended) A computer implemented network reconfiguration program for causing a computer to execute a network reconfiguration method for reconfiguring a network including a plurality of sub-networks each including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, the network reconfiguration method including the steps of:

(i) causing each node to detect a linkable ~~node:~~ node;

(ii) generating detection information including a result of detection in the step (i);

(iii) with reference to the detection information generated in the step (ii), selecting a node ~~becoming~~ to become the node operating in the master mode, ~~in such a manner~~ so as to reduce a total number of nodes operating in the master mode; and

(iv) constructing a sub-network including the node selected in the step (iii).

9. (Currently amended) A computer implemented link change program causing a computer to execute a link change method for changing a link of a node which is eligible to be a part of a sub-network including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, and is capable of operating both in the master mode and in the slave mode, the link change method including the steps of:

(i) detecting a linkable node;

(ii) receiving, from ~~an outside~~ other nodes, detection information including results of detections of other nodes constituting a network including sub-networks including said sub-network;

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(iii) updating the received detection information with reference to a result of detection of the node, which is obtained in the step (i);

(iv) ~~to the outside,~~ sending the detection information updated in the step (iii) <u>to other nodes</u>;

(v) with reference to the detection information updated in the step (iii), selecting a node ~~becoming~~ <u>to become</u> the node operating in the master mode, ~~in such a manner~~ <u>so</u> as to reduce a total number of nodes operating in the master mode;

(vi) based on a selection in ~~the~~ step (v), selecting a mode of the node and selecting a target node to be linked with; and

(vii) if the target node selected in the step (vi) is different from a current target node, switching the target node.

10. (Currently amended) A computer-readable recording medium storing a network reconfiguration program for causing a computer to execute a network reconfiguration method for reconfiguring a network including a plurality of sub-networks each including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, the network reconfiguration method including the steps of:

(i) causing each node to detect a linkable ~~node:~~ <u>node;</u>

(ii) generating detection information including a result of detection in the step (i);

(iii) with reference to the detection information generated in the step (ii), selecting a node ~~becoming~~ <u>to become</u> the node operating in the master mode, ~~in such a manner~~ <u>so</u> as to reduce a total number of nodes operating in the master mode; and

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(iv) constructing a sub-network including the node selected in the step (iii).

11. (Currently amended) A computer-readable recording medium storing a link change program causing a computer to execute a link change method for changing a link of a node which is eligible to be a part of a sub-network including a node operating in a master mode and at least one node operating in a slave mode and being linked with the node operating in the master mode, and is capable of operating both in the master mode and in the slave mode, the link change method including the steps of:

(i) detecting a linkable node;

(ii) receiving, from~~an outside~~ other nodes, detection information including results of detections of other nodes constituting a network including sub-networks including said sub-network;

(iii) updating the received detection information with reference to a result of detection of the node, which is obtained in the step (i);

(iv) ~~to the outside,~~ sending the detection information updated in the step (iii) to other nodes;

(v) with reference to the detection information updated in the step (iii), selecting a node ~~becoming~~ to become the node operating in the master mode, ~~in such a manner~~ so as to reduce a total number of nodes operating in the master mode;

(vi) based on a selection in~~the~~ step (v), selecting a mode of the node and selecting a target node to be linked with; and

(vii) if the target node selected in the step (vi) is different from a current target node,

switching the target node.